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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,553	12/11/2003	Wai T. Lam	34826-1014	7752

7590 12/27/2005

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EXAMINER	
PATEL, HETUL B	
ART UNIT	**PAPER NUMBER**
2186	

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/733,553	LAM ET AL.	
	Examiner	Art Unit	
	Hetul Patel	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *02/27/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-24 are presented for examination.

2. The IDS filed on 02/27/2004 has been received and carefully considered.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested:

"SYSTEM AND METHOD FOR REPLICATING ONLY VALID DATA".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-2, 10-11, 13, 18 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Tomita (USPN: 6,898,669).

As per claim 1, Tomita teaches a method for replicating data from a storage device (i.e. the disk array 12 in Fig. 1), comprising: performing a read operation on each

allocated data block on the storage device; recording each I/O access to the storage device resulting from the read operation; identifying the data blocks involved in each I/O access to determine which blocks contain valid data (e.g. see Col. 10, lines 29-38 and the abstract and Fig. 1); and replicating the data blocks that contain valid data (e.g. see Col. 8, lines 37-49).

As per claim 2, Tomita teaches the claimed invention as described above and furthermore, Tomita teaches that the read operation includes reading metadata (i.e. flags) associated with files on the storage device (e.g. see Col. 10, lines 47-51).

As per claims 10 and 11, see arguments with respect to the rejection of claims 1-2, respectively. Claims 10 and 11 are also rejected based on the same rationale as the rejection of claims 1-2, respectively.

As per claims 18 and 20, see arguments with respect to the rejection of claims 1-2, respectively. Claims 18 and 20 are also rejected based on the same rationale as the rejection of claims 1-2, respectively.

As per claim 13, Tomita teaches the claimed invention as described above and furthermore, Tomita teaches that a computer (i.e. the host 2 in Fig. 1) associated with the storage device (i.e. 12 in Fig. 1) (e.g. see Fig. 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

> invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3, 12 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita in view of Long et al. (USPN: 2003/0195865) hereinafter, Long.

As per claim 3, Tomita teaches the claimed invention as described above. However, Tomita does not teach that the metadata includes the name of the file, access permissions to the file, the date of creation of the file, and dates of modification of the file. Long, on the other hand, teaches that information about files is generally referred to as the file system "metadata". Examples of metadata associated with files are: (1) a document's name, creation date, last modified date (2) permissions for accessing the document, and (3) the folder path for accessing the document (e.g. see paragraph [0010]). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the current invention was made to modifying Tomita's method by including information about file, such as name, access permission, date of creation and date of modification, as taught by Long. In doing so, it can be determined which specific data block(s) are valid and based on that those data block(s) is/are replicated. Therefore, it is being advantageous.

As per claims 12 and 21, see arguments with respect to the rejection of claim 3. Claims 12 and 21 are also rejected based on the same rationale as the rejection of claim 3.

6. Claims 4-9, 14-17, 19 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita in view of Neufeld (USPN: 5,668,971).

As per claim 4, Tomita teaches the claimed invention as described above. However, Tomita failed to teach the further limitation of cleaning a cache on a computer associated with the storage device before performing any read operations. Neufeld, on the other hand, teaches about cleaning/flushing the cache memory (i.e. the combination of 24 and 28 in Fig. 1) prior to performing any read operations (e.g. see Col. 3, lines 58-65). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the current invention was made to implement the cleaning step of Neufeld in the method taught by Tomita. In doing so, it will prevent any attempts to fill (invalid) data from the cache memory in response to the read request.

As per claim 5, Tomita teaches a method for replicating data from a storage device (i.e. the disk array 12 in Fig. 1), comprising performing a read operation on each allocated data block on the storage device, includes reading metadata (i.e. flags) associated with files on the storage device; notifying an apparatus (i.e. the host 2 in Fig. 1) to record each I/O access to the storage device resulting from the read operation; identifying the data blocks involved in each I/O access to determine which blocks contain valid data (e.g. see Col. 10, lines 29-38, 47-51 and the abstract and Fig. 1); and replicating the data blocks that contain valid data (e.g. see Col. 8, lines 37-49).

However, Tomita failed to teach the further limitation of cleaning a cache on a computer associated with the storage device before performing any read operations. Neufeld, on the other hand, teaches about cleaning/flushing the cache memory (i.e. the combination of 24 and 28 in Fig. 1) prior to performing any read operations (e.g. see Col. 3, lines 58-65). Accordingly, it would have been obvious to one of ordinary skill in

the art at the time of the current invention was made to implement the cleaning step of Neufeld in the method taught by Tomita. In doing so, it will prevent any attempts to fill (invalid) data from the cache memory in response to the read request.

As per claims 15 and 19, see arguments with respect to the rejection of claim 4. Claims 15 and 19 are also rejected based on the same rationale as the rejection of claim 4.

As per claim 6, the combination of Tomita and Neufeld teaches the claimed invention as described above and furthermore, Tomita teaches that the apparatus is a software program (e.g. see Fig. 2).

As per claims 14 and 22, see arguments with respect to the rejection of claim 6. Claims 14 and 22 are also rejected based on the same rationale as the rejection of claim 6.

As per claim 7, the combination of Tomita and Neufeld teaches the claimed invention as described above and furthermore, Tomita teaches that the apparatus is a filter driver (i.e. the host 2 in Fig. 1).

As per claims 17 and 23, see arguments with respect to the rejection of claim 7. Claims 17 and 23 are also rejected based on the same rationale as the rejection of claim 7.

As per claim 8, the combination of Tomita and Neufeld teaches the claimed invention as described above and furthermore, Tomita teaches that the apparatus is part of a storage management system (i.e. shown in Fig. 1).

As per claims 16 and 24, see arguments with respect to the rejection of claim 8. Claims 16 and 24 are also rejected based on the same rationale as the rejection of claim 8.

As per claim 9, the combination of Tomita and Neufeld teaches the claimed invention as described above and furthermore, Tomita teaches that the apparatus replicates the data (e.g. see Col. 8, lines 33+).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hetul Patel whose telephone number is 571-272-4184. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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MATTHEW D. ANDERSON
PRIMARY EXAMINER